

**Claims**

1. A method for writing a pattern on a surface intended for use in exposure equipment, comprising the steps of:

5 - arranging an object having a thickness (T) provided with a surface on a stage of a pattern generating apparatus,

- dividing the surface into a number of measurement points, where two adjacent measurement points being spaced a distance (P) apart not exceeding a predetermined maximum distance,

10 - determining the gradient of the surface at each measurement point,

- calculating a 2-dimensional local offset (d) in the x-y plane for each measurement point as a function of the gradient, and the thickness (T) of object, and

15 - correcting the pattern to be written on said surface by using the 2-dimensional local offset (d).

2. The method according to claim 1, wherein the step of correcting the pattern comprises the steps:

20 - determining a correction function for the surface using the calculated 2-dimensional local offset (d) for each measurement point, and

- writing the pattern on the surface using the correction function with the pattern generating apparatus.

25 3. The method according to claim 1, wherein the step of determining the gradient comprises measuring the variation in height of the surface at each measurement point.

4. The method according to claim 3, wherein the step of measuring the variations in height of the surface comprises the steps of:

- determining a reference surface,

5 - measuring the height (H) between the reference surface and the surface of the object at each measurement point,

whereby the 2-dimensional local offset (d) in the x-y plane may be calculated as a function of the measured height (H), the distance (P) from each at least one adjacent measurement point, and the thickness (T) of the object.

5. The method according to claim 4, wherein the local offset (d) is calculated using the formula:

$$d = (T \cdot H) / (2 \cdot P)$$

6. The method according to claim 3, wherein the measurement points are arranged in a grid structure having a first predetermined pitch in the x direction and a second predetermined pitch in the y direction.

7. The method according to claim 4, wherein the height (H) between the reference surface and the surface of the object originate from unevenness of the stage, and/or unevenness of one or both surfaces of the object and/or undesired objects arranged between the stage and the object.

8. The method according to claim 7, wherein the undesired objects may be trapped air or particles.

9. The method according to claim 1, wherein the top surface of the object is selected to carry the pattern.

10. The method according to claim 1, wherein the correction function also compensates for expected deformation from the exposure equipment during subsequent processing steps.

11. A method for measuring the physical properties of a surface, including the steps of:

- arranging an object having a thickness (T) provided with a surface on a stage of a measuring apparatus,

- dividing the glass plate into a number of measurement point, where two adjacent measurement points being spaced a distance apart not exceeding a predetermined maximum distance,

- determining the gradient of the surface at each measurement point,

- calculating a 2-dimensional local offset (d) in the x-y plane for each measurement point as a function of the gradient, and the thickness (T) of object, and

- determining a correction function for the surface using the calculated 2-dimensional local offset (d) for each measurement point.

12. The method according to claim 11, wherein the step of determining the gradient comprises measuring the variation in height of the surface at each measurement point.

13. The method according to claim 12, wherein the step of measuring the variations in height of the surface comprises the steps of:

- determining a reference surface,

- measuring the height (H) between the reference surface and the surface of the object at each measurement point,

whereby the 2-dimensional local offset (d) in the x-y plane may be calculated as a function of the measured height (H), the distance (P) from each at least one adjacent measurement point, and the thickness (T) of the object.

- 5     14.     The method according to claim 11, wherein the object is a reference object, and said surface is provided with marks at each measurement point.